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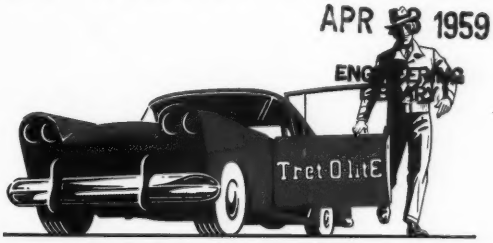

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LELA MONROE—Vice President • LARRY O. MILLER—Secretary and Advertising Manager
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Please, Uncle, Don't Kill the Goose

Every so often some one in Washington gets the bright idea of reducing or even eliminating the percentage depletion allowance for oil and gas producers. It will probably happen again in this Congress. It will more than likely be instigated by men not in oil or gas producing states who do not realize that the petroleum industry is vital to every one, no matter where he lives.

The 27.5 percentage depletion allowance which is a credit on the federal income tax of oil and gas producers was authorized by Congress many years ago and has been reaffirmed by Congress after Congress ever since. It is no special favor to the petroleum industry; it is allowed to help in the eternal search for oil. That search for new oil is an extremely expensive and hazardous business which is getting more hazardous and more expensive every day. Wildcat wells get deeper and dry holes still hold their preponderance in exploratory work; and dry wildcats cost just as much to drill as do discovery wells. Moreover, when you get a producer, you don't have it forever; for oil wells wear out, become useless and have to be replaced . . . if you can find a new field to replace them.

Let's Look at the Cost

The Independent Petroleum Association of America has just published some facts on "Percentage Depletion and Cost of Finding Petroleum." Here they are (and we quote).

"Government statistics now are available which show the relationship between expenditures for finding and developing new oil reserves and the role percentage depletion plays in this job of finding oil.

"The Chief Petroleum Engineer of the U.S. Bureau of Mines, in a paper prepared for the World Power Conference in Montreal, Canada, September 1958, states that in the year 1955 the U.S. petroleum producing industry—including both independents and major companies—expended a total of $5.1 billion in the search for and development of new petroleum reserves within the United States. This study also shows that for the year 1955, finding and developing costs together with lifting and other operating costs were in excess of income from petroleum production for the entire producing industry by approximately one-half billion dollars.

"The $5.1 billion expended in 1955 in the exploration for and development of new oil reserves was equivalent to $2.40 per barrel of net crude oil production in that year. Based on the U.S. Bureau of Mines average wellhead price of crude oil for the year 1955 $2.77 per barrel, the theoretical maximum percentage depletion could not have exceeded 76 cents per barrel. This depletion figure, however, for petroleum producers is a theoretical maximum, based on the 27½ percent rate, rather than the actual amount of depletion since the 50 percent of net income limitation reduces the average effective depletion rate for the petroleum industry to no more than 23 percent.

"Thus, the domestic petroleum industry's exploration and development expenditures alone in 1955—not including lifting costs, taxes, etc.—totalled $2.40 per barrel or more than three times the maximum percentage depletion of 76 cents. That is, for every dollar from percentage depletion plowed back in the search for new oil reserves, the producing industry put up and spent two dollars from other sources.

"This information clearly demonstrates that the petroleum producing industry requires new capital far in excess of the depletion deduction to carry on the constant search for new oil and gas reserves."

It must be remembered that percentage depletion allowance applies only to income from the production of oil, not from other petroleum industry operations. It is allowed because a producer is selling part of his capital every time he sells a barrel of oil. It is in no sense a tax loophole. Thanks to it, this nation has been able to build the petroleum industry to what it is today. The black gold egg laying goose may not die if the percentage depletion allowance is eliminated . . . but it will certainly get mighty sick. And it might cost all of us a lot to get it back on its feet again.

A Tribute to H. D. Collier

He died on January 30.

And there ceased a rich and unprecedented relationship with Standard Oil Company of California of well over a half century.

The impact of Mr. Collier's talents not alone upon this Company but upon the petroleum industry and American business was great. But for all of this we in this Company hold close the recollection of a kind and considerate man with an ever-present desire to serve his fellow employees and his fellow citizens to the utmost of his own splendid human resources.

When one reflects upon the impressive span of Mr. Collier's career it is evident how much of the lifetime of this Company is represented. And when one also ponders upon the fact that for more than three decades, 1924-1955, he was a member of the Board of Directors, it becomes further apparent why his name has for so long been synonymous with that of this Company.

Mr. Collier was elected president in the critical year of 1940; there were 37 years of broad experience behind him, sixteen years of which he had served on the Board of Directors. The war period to follow called for the utmost from the petroleum industry and this Company dispatched its responsibilities and obligations with credit to itself and to its leadership.

He was not a man to become aloof as his burdensome duties multiplied. He believed that his greatest strength was in his first-hand knowledge of his Company's business, its operations, its people, its stockholders and the public. He took his Board meetings to the cities where the Company's operations were part of the community life and economy, and he sat down time and time again with his fellow directors and the citizens of those cities. Mr. Collier had risen through the sales organization. He had been a good salesman and an able sales executive. His command of good salesmanship served him throughout his career.

In the oil business, perhaps the most competitive in the world, Mr. Collier enjoyed the complete respect and trust of his fellow business executives. He led his own associates to the annual meetings of the American Petroleum Institute where his wisdom and prudence and complete fairness were undeniably recognized.

Mr. Collier played for many years an important role in the international petroleum scene representing this Company's interests in the remarkable growth of its foreign investments. Particularly was his business acumen shown in relation to the Middle East operations.

He never allowed himself in those years or in the many years to follow to lose touch with people. It was not unusual for him when a worthy cause impelled him to do so, to pick up his hat and go out in behalf of the Community Chest, the American Red Cross, the American Cancer Society, for a deserving college or for the cause of economic education in which he had a deep interest.

He responded with cheerful readiness to calls from his city of San Francisco to help for its betterment; in fact, only a week before his death, Mr. Collier traveled across the country with city officials in the good interests of this community.

Though he had passed eighty-two years of age when he died, Mr. Collier retained to the last his characteristic alertness, energy and charm. He was a well-known and well-beloved citizen seen so often striding to and from his downtown office, a handsome, erect, white-haired gentleman receiving the warm recognition of a legion of people in every walk of life as well as the respectful notice of those whom he did not know.

His good works in so many places and in so many ways remain to keep alive our memory of him.

There is a deep sense of personal loss felt by each member of the Board of Directors who has had the rewarding privilege of association and friendship with Mr. Collier.

R. G. Follis,
Chairman of the Board,
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API Pacific Coast Dist. Division of Production Meeting April 30 - May 1

The Pacific Coast American Petroleum Institute, Division of Production, spring meeting will be held April 30 and May 1, according to Mr. R. A. Malott, Shell Oil Company, Chairman, API Division of Production, Pacific Coast District. The meeting will be held at the Los Angeles Biltmore Hotel. Malott stated that "For the convenience of those attending, the meeting is being held earlier than usual this year in order to avoid conflicting with the International Petroleum Exposition and World Petroleum Congress."

Mr. H. H. Ewing of the Union Oil Company, general chairman of the meeting, has completed the appointments of the various chairmen and reports that plans are proceeding on schedule. Mr. Ewing has announced the following chairmen and their responsibilities:

A. M. Laurie, State Board of Equalization, Drilling Sessions Chairman.

F. E. Schoonover, Monterey Oil Company, Production Sessions Chairman.

Ray Elner, Kobe, Inc., General Arrangements Chairman.

The management address will be delivered Thursday afternoon by Mr. R. L. Minckler, President, General Petroleum Corporation.

The banquet speaker Thursday evening will be Dr. William H. Pickering, Director of the Jet Propulsion Laboratories, California Institute of Technology in Pasadena. The titles of their speeches will be released at a later date.

The vice-chairmen of Ray Elner's committee who are handling the arrangements for the meeting are as follows: James C. Kelley, Finance; Gordon Clarke and E. E. Embury, Hotel Arrangements; T. O. Roe, Publications; C. A. Davis, Ticket Sales; H. V. Jacobsen, Publicity.

Boys Club Board Meeting

The 1959 meeting of the R. M. Pyles Boys Camp Board met this month and decided on 408 as the number of boys to be taken into the High Sierra Camp for the summer of '59.

Cy Rubel, President of Union Oil Company, reported on the progress of the new winter headquarters and facilities in Huntington Beach for the Boys Camp and reported the completion date as May 1.

Complimentary reports on the successful operation of the outstanding camp for needy boys was presented and a vote of confidence given to Bob Pyles.

Pyles was elected by the Board as President to serve the 1959 season. L. L. Aubert elected Vice-President and Rudy Schweitzer Secretary-Treasurer.

Attend R. M. Pyles Boys Camp Meeting. Left to right, seated: Leonard Graves, Jud Hillman, Fritz Huntsinger, Bob Pyles, L. L. Aubert; Bob McAdams, Camp Coordinator; Ben Wharton, Camp Director; George Suman. Standing: Mort D'Evelyn; Stendor Sweeney; Warren Johnson; Marcus Mattson; Sam Bowlby; Cy Rubel; John Hancock; Free Fairfield; Rudy Schweitzer and Russ Green.

SEG Announces Scholarships At AAPG Convention

Frank Goldstone, chairman of the trustees for the Society of Exploration Geophysicists foundation, recently announced that more than $19,000 in exploration science scholarships are being offered by the SEG for the 1959-60 school year. He said 17 oil exploration companies are sponsoring 20 individual grants totaling $18,000 and 16 individuals and companies had contributed an additional $1,000 to the foundation's general fund for education and research.

Goldstone, who is manager of exploration technical services for Shell Development Co., Houston, said less than 50 applications had been received with the deadline only a month away. He advised interested students to get application forms at the SEG exhibit during the AAPG convention being held at Memorial Auditorium in Dallas, or write to the SEG, Box 1536, Tulsa 1, Oklahoma.

After 5,000 years of mud... superhighways of petroleum

▲ **YESTERDAY.** Muddy roads clutched at the world's wheels, slowing transportation to a worm's pace. Then at last, man found he could make smooth, hard-surfaced roads from asphalt — a non-volatile form of petroleum. In the early promotion of asphalt road-building, Texaco took a prominent part.

◀ **TODAY.** Texaco is one of the world's largest manufacturers of asphalt products. These products make possible great ribbons of smooth superhighways, as well as airport landing strips. They are used for roofing, battery boxes and many other useful items. Texaco's leadership and growth in this field result from its policy of constantly planning for the future. THE TEXAS COMPANY

TEXACO

... CONSTANT PROGRESS IN OIL'S FIRST CENTURY

Petroleum LORE and LINGO

By RICHARD SNEDDON

Man Versus Machine

In every country of the world, no matter how primitive it may be, there have been established standards of measurement by which to rationalize the systems of exchange and evaluation that seem to be essential to human existence. One of the oldest computing devices known to man is the abacus which takes its name from the Greek **abax,** meaning "a counting board." It consists of a series of beadlike counters strung on wires and, despite its simplicity, in the hands of an expert is a quite amazing instrument. It was used in Egypt and China thousands of years before the birth of Christ and is still extensively employed in Chinese houses of commerce; it is a popular appurtenance of baby carriages and cribs here in the United States; and not long ago on a television show, a pretty young Cantonese abacist engaged in an arithmetical joust with an electric-comptometer operator. The problem presented included addition, substraction, multiplication and division, in a normal business accounting sequence, and the margin of time by which the lady lost the contest was about as insignificant as the holder of a losing ticket in the Dublin Sweepstakes. Now that I have reached the outer fringes of senility, I gloat like everything when an ordinary mortal gives one of these mechanical brains its comeuppance. It can be well imagined, therefore, with what boundless pleasure I read in an Eastern newspaper some time ago that one of our better chess players had whipped the metaphorical pants off an electronic brain, and had left it blinking its myriad little lights in a perfect agony of humiliation.

The First Digital Computer

Long before the adoption of the abacus, there is little doubt that men concerned themselves with the simple problems of addition and substraction, but instead of using the bead arrangement to expedite their calculations, they used pebbles. In fact such words as calculus and calculate are derivatives of the Latin **calculus,** which means "a small pebble." It seems to have been the custom in the days of our cavemen ancestors to work out simple arithmetical exercises with the aid of groups of small stones, meantime recording the results of intermediate steps on the ground with a pointed stick. In substantiation of this, one of our historical comedians notes that in Bible times, according to the record, "the sons of men multiplied upon the face of the earth." It is well known that, when the ancients began to get excited about things in terms of number and dimensions, they soon discovered their own built-in calculating equipment — five fingers on each hand and five toes on each foot. Wherewith you have the first digital computer. **Digitus** is Latin for either "finger" or "toe," and "computer" is from the Latin **con,** "with," and **putare,** "to reckon."

Knots and Numbers

The common lineal "foot" was originally the length of the average man's foot; the height of a horse was stated in hands, a hand being the approximate width of a normal male hand; and other parts of the human anatomy were similarly utilized in the general system of measurement. The "cubit," for instance, a Hebrew unit which crops up frequently in the Bible, was the distance between the elbow and the tip of the outstretched middle finger. The Peruvian Incas were the devisers of a unique variation on the early counting aids. They employed knotted ropes of varied colors to keep account of their cattle and other possessions. Knots were known in the Inca tongue as **quipu** and like beads on an abacus, they could represent any unit or multiple thereof. The operators of these hempen calculators were called **quipucani-ayocuna** or "knot keepers" and they were the Certified Public Accountants of their day. It will be easy to see that the knotted rope could also become a measuring tape if the knots were carefully tied at intervals of a foot, a cubit, or indeed any unit of length.

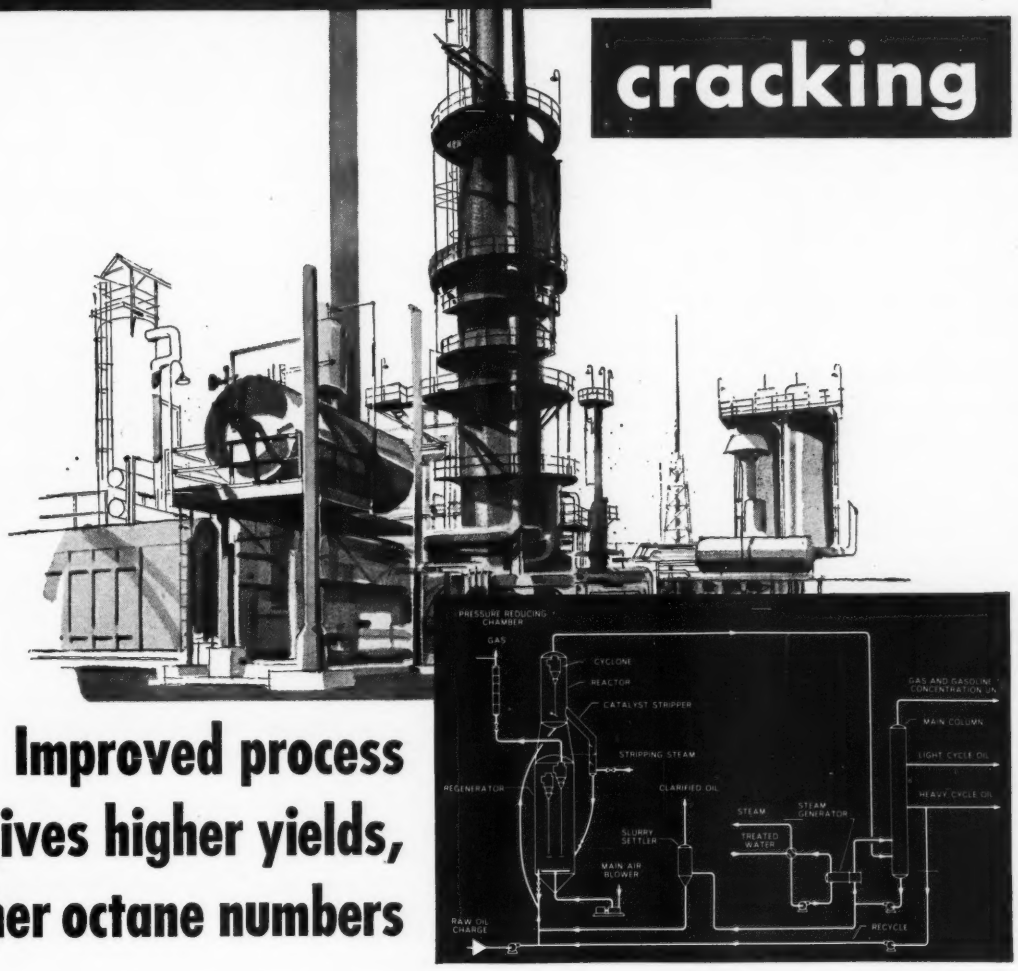
Reaching for Accuracy

It quickly became clear that something with more uniformity than anatomical spans and elastic rope lengths would have to be adopted as standards if the science of measurement were to be invested with a reasonable degree of accuracy. Thence in the course of time, constants were developed for a wide range of linear increments, each in itself being stable and inalterable, and each having a known and unchangeable relationship with every other. That pretty generally has been the evolutionary history of all sciences. From groping, indefinite infancy they have grown to methodical mathematical maturity, and every fresh advance has widened the horizon until the scope of application and opportunity, like the heavens, has become limitless.

Cumbersome Standards

While this standardization was by all means desirable, it must be admitted that it had some quite undesirable aspects. These were not discernible at the time but have since become very obvious. For one thing, the standardizers gave little thought to easing the lot of people, from tradesmen to scientists, who would later become involved in both qualitative and quantitative evaluations, either for academic or commercial purposes. The English monetary system with its basic pounds, shillings, and pence and its confusing addition of guineas, half-crown, florins, half-florins (facetiously known as "pea shilling tooses"), sixpences, threepenny bits, halfpennies, and farthings, is an excellent example of what we have in mind. A guinea is 21 shillings, a pound is 20 shillings, a crown is 5 shillings, a florin is 4 shillings, a shilling is 12 pence, a penny is 4 farthings, all of which with the other equivalents he has to learn, exercises a terrific strain on the memory and mentality of the stu-

UOP fluid catalytic cracking



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dent. By the time he knows for sure what all the measures and their relationships are, his mind is so saturated, there is little likelihood of further absorption. And without constant application it is not easy to remember that there are 1728 cubic inches in a cubic foot, a link is 7.92 inches, and there are 30¼ square yards in one square rod, pole, or perch. Keeping a miscellany of that sort neatly catalogued and indexed in the cerebral pigeon holes would tax the retentive capacity of a near genius. What a saving of time and labor the world would have experienced in the meantime, had a universal metric system of weights and measures been adopted a hundred years ago!

Volume Measurement

Just as it has been with the various measures already cited, so it has been with all other value factors and qualities. In preceding pages we have discussed gravity, density, weight, viscosity, volatility, etc., in relation to oil. There is one very ordinary measurement, however, to which little reference has been made, and yet it confronted the petroleum industry with one of its first major problems. That is, the precise determination of volume, and the correlative need of standard capacity containers for the storage and transportation of gas and oil. The comparatively small quantities of oil produced by the first prospectors were contained in cans, casks, bottles, tubs, barrels, or any vessel that should happen to be available. It is even said by historians that Indians soaked it up with blankets from surface seepages, later wringing out the blankets into ceramic pots or bowls. At this time oil producers and purchasers were not too well apprised of the possible uses of petroleum and were still advocating it as a liniment for the relief of aches and pains. In this stand they were influenced no doubt by the old Marco Polo declaration: That in the Far East he found oil in common use for healing the sore backs of camels.

Of a Resolution

As, in its early stages, the drilling industry gradually improved its methods with experience, and well yields increased, barrels of every conceivable variety and dimension were accumulated by the operators. Oil, at least in sizable quantity, was a new commodity and there had been no advance preparation for storage or transportation. The lack of discrimination with regard to the size of the barrels could obviously not be permitted to continue for very long, and both buyers and sellers were fully agreed on the necessity for some standard measure of capacity. Accordingly the producers held a number of meetings and finally, according to the Oil City Register (Oil City, Pennsylvania) of August 31, 1866, a circular was released to the trade, as follows: "Whereas it is conceded by all producers of crude petroleum on Oil Creek that the present system of selling crude oil by the barrel, without regard to the size, is injurious to the oil trade, alike to the buyer and seller, as buyers with an ordinary sized barrel cannot compete with those with large ones. We, therefore, mutually agree and bind ourselves that from this date on we will sell no crude by the barrel or package but by the gallon only. An allowance of two gallons will be made on the gauge of each and every 40 gallons in favor of the buyer."

A Barrel For Oil

There you have the birth of a measure, the 42 gallon barrel, on the basis of which literal seas of oil have been bought and sold for almost a century. There also you have another screwball standard that has cost the industry a tidy fortune in calculating time alone. It is hard to say just how the oil producers picked on that 42 figure but it is a fact that long before 1866, British vintners had set up a standard container, called a tierce, that also held 42 gallons. Since wine merchants and early oil men were probably closely associated in sundry afterwork cavortings, it is not unlikely that some member of the barrel-standardizing committee was led to import a tierce of Malmsey from overseas and when he received the bill was so much impressed by the 42 gallon item that he tossed it into the meeting just for the heck of it.

Some Complications

As nearly as we can determine, however, he overlooked an important factor in the deal. Tierce is really an old French word, meaning "one-third," and in this instance it means one-third of a "pipe," which is another English unit, containing the equivalent of two "hogsheads." The capacity of a hogshead varies widely, but is usually 63 gallons, so a pipe holds 146 gallons, one-third of which would be 42 gallons, and there we are back to the tierce again. Nobody seems to know how the pipe and hogshead containers came by their names, but in all probability, since it held 146 gallons, the pipe was considerably longer than a barrel and had more the appearance of a large-diameter cylinder or pipe; and if the wine in an oversize barrel happened to be especially good, it is easily understandable that the congregation at the spigot head might become a bit hoggish and thus give an opportunity to some smart aleck to come up with the name, hogshead. "Gallon" is a modification of a medieval English word, meaning "a liquid measure."

U. S. and Imperial Units

Now, that the oil men's standardization committee either forgot or didn't care about was that the British had two different legally acceptable gallons, one a fifth larger than the other. The smaller one was especially used by the wine trade and was known as the Queen Anne gallon because it was first legalized during Anne's reign. This was the one that was the base of the tierce, and this was the one that the petroleum industry of the United States adopted. Meantime, the big Imperial gallon has become the standard liquid measure of the British Empire. That's why American tourists visiting in Canada scream about the price of gasoline up there. They forget that 4 Imperial gallons are equal to 5 U. S. gallons, and they never notice that it takes fewer gallons to fill their gas tanks. Nor do they realize that the 35 gallon Canadian barrel holds exactly the same quantity of fluid as our own 42 gallon barrel.

Origin of the Word

"Barrel" is from the Old French **baril** which the dictionary defines as "a round bulging vessel or cask of greater length than breadth, and having flat ends or heads." That is all very well as far as it goes but it doesn't go far enough, for the barrel has more pedigree than a full-blooded Sealyham. And just for the record that word pedigree comes from the French **pied de grue** which means "the foot of a crane." It was so named from the three line design resembling the imprint of a bird's foot that was used by genealogists to symbolize descent.

Some Varied Uses

At first barrels were laboriously fashioned by hand without regard to their ultimate capacity and there are in existence still many exquisitely carved ones that have become museum pieces. Down through the years they

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have been utilized as containers for an endless assortment of commodities. Just after the turn of the century Scottish grocery shops exhibited all sorts of things in barrels, among them fish, flour, butter, lard, corned beef, and a vile smelling coal oil that tinctured everything in the establishment. If the shop was licensed, it also had a couple of barrels of whiskey over in a dark corner, and it was common knowledge in our village that certain red nosed ladies were practising the gentle art of purchasing a wee nip of usquebaugh and having it charged on the books as bread. Nobody paid cash in these days. Everything was bought "on tick" and all the charges were written into "the book," a very important part of the busy housewife's record keeping system. The husband's pay day was also pay-off day for the tradesmen, if there was anything left which there frequently wasn't.

The Storied Barrel

Besides its adaptation to the purposes of trade and commerce, the barrel has played an interesting part in innumerable historic events of greater or lesser significance. Whole nations have panted in uncontrollable excitement while daring young men, one after another, have permitted themselves to be nailed securely in barrels and then sent tumbling to their doom over the Falls of Niagara. Legend has it that one of the more intemperate English kings, or some person of high estate over there, had the great good fortune to be drowned in a butt of Malmsey wine. (A butt is another large size barrel that takes its name from the Italian **butta,** "a cask.") In recent wars, hastily constructed bridges, floated on barrels, have enabled entire armies to make strategic river crossings when the so-called "permanent" bridges had been demolished. And what beauty of yesterday hasn't washed her luxuriant tresses in nice, soft water from the omnipresent rain barrel —only to smell of creosote for the rest of the week? Barrels have been made into junior quonset huts for dogs and other pets; disintegrating specimens have replenished our fuel supplies when all other sources have failed; and there is scarcely an attic or garage in the United States today that doesn't boast at least two barrels, stuffed to overflow with defunct clothes, unwearable hats, warped tennis racquets, outmoded skating boots, moth eaten furs, and other valuable treasures of the past. If there were no barrels to store these in, think of the smog that would be created if they had to be burned up!

The End of An Era

Now, as far as oil is concerned, the wooden barrels, like the wooden derricks are passé. Safety demanded a stronger container that would better stand the rigors of long distance travel and rugged handling, and so today we have steel drums. They are not 42 gallon barrels anymore, just steel containers that usually hold 45 gallons. They are not only safer but are much more economical, since they can be used over and over again. Replacing the old style cooperage, with its colorful system of fitting together an assortment of staves, hoops, and heads to form the finished article, we now have a new kind of assembly-line layout in which steel drums are treated to remove dents, are cleaned and painted, and in a very short time returned to service as good as new. It is simply another indication of the inexorable march of progress and the passing of an interesting operational phase of the oil business. There will be much to remember it by for the literature is replete with stories and information about barrels, casks, puncheons, kegs, rundlets, tuns, butts, ferkins, hogsheads, tierces, pipes, and all their potbellied progeny. And, if your name should happen to be Cooper, you have a permanent reminder of the wooden barrel era, for one of your ancestors was probably a barrel maker, or cooper. They got their title from the Latin **cupa,** "a tub maker."

Changes In Analytical Method

I have always felt that one of the great contributions to scientific advance in all areas of industrial effort and, of course, also in pure research, has been our increasing ability to measure smaller and smaller increments of everything. That and the additional fact that we have turned to quantitative use many methods that were long thought to be solely qualitative. There are two kinds of analyses—qualitative and quantitative. By the first, the chemist, physicist, or engineer can merely find out what substances or effects are present in any particular situation but can not tell to what extent they are present. By the second, the effects or quantities can actually be measured in terms of some standard or unit. For instance, until comparatively recently, the spectroscope which was described earlier, has merely been able to detect or identify substances by the spectra or images they produce when they are subjected to a hot flame and partially vaporized. Now, however, by new techniques and additional apparatus, it is possible to make accurate quantitative determinations on complex mixtures in a very short space of time.

Change of Plan

The mass spectrometer is another ingenious instrument that has had a tremendous impact on the entire science of measurement. It is one of the early manifestations of the encroaching atomic age, in which by a species of molecular and atomic disintegration, the components of a mixture of gases can be segregated and determined quickly and accurately. It was originally designed to aid in the search for oil by detecting minute emanations of petroleum hydrocarbons at the earth's surface and so pointing to the presence of an oil reservoir underneath. Nothing is conceded to be absolute any more by the scientists and it is assumed that even the most impervious of cap rock is incapable of holding completely the gases that are a part of any oil deposit. Some infinitesimal seepage is likely to take place under any circumstances and it was hoped that the acute sensitivity of the mass spectrometer would be able to detect any such escape. In the meantime, however, the instrument was found to be an excellent medium for the control of refinery operations, and the demand there was so immediate and so great that the original purpose was abandoned.

Progress Never Ceases

This sort of presentation could go on endlessly but, in most instances it can be expounded more appropriately. as we discuss the related phases of petroleum operation. Every department has its quota of interesting measurement units, like the physicists with their volts, amperes, faradays, ohms, etc., all of which derive their names from people who devised or were in some way responsible for their development. The same goes for mud engineers and core analysts with their maxwells, gausses, and millidarcys. These, too, are named for people. The whole system of testing is in most cases a laboratory attempt to simulate as nearly as possible the conditions of actual use, or the conditions that prevail in connection with their use, and the results obtained are not always com-

pletely reliable since conditions other than those anticipated by the tester may easily be present. Nonetheless, the processes of investigation and correction go on indefinitely, and with every added bit of knowledge that is turned up, the ultimate value of the method of test increases. That is how progress takes place. It is slow but sure, and it explains why researchers continue to strive towards that which is perfect, knowing while they do that there is no such thing as perfection.

Directors Prefer Texaco Inc.

The Board of Directors of The Texas Company has voted to change the name of the company to Texaco Inc., subject to ratification by the stockholders at the annual meeting, April 22, according to Augustus C. Long, Chairman.

"The wide distribution and sale of its products bearing the trademark 'Texaco' in all 49 states and in many foreign countries have resulted in the company being generally known and referred to as 'Texaco' by its stockholders, customers, employes, and the general public," Mr. Long said. "The change in name has been the subject of intensive study for several years and the names of many subsidiaries have already been changed to include the name 'Texaco'."

Mr. Long pointed out that changing the name of the company to Texaco Inc. would be beneficial in its marketing and advertising programs and in its relations with the public at large.

Oil Industry Welcomes Smog Investigation

The oil industry recently declared it welcomed a proposed Los Angeles County Grand Jury investigation into the Southern California smog problem.

Felix Chappellet, vice president and general manager of the Western Oil and Gas Association, said his group, which represents the oil industry in the West, "welcomed the opportunity for all the cards to be laid on the table."

"It is vitally important that all the people of our community understand the cause of smog and what can be done to eliminate it," said Chappellet. "Representatives of our industry would be most happy to appear before the Grand Jury and aid in any way they can in presenting information which would be of value."

Davis Talks on Domestic Petroleum Exploration, Achievements and Prospects

During its first century, the domestic petroleum industry has consistently outrun many gloomy predictions as to its ability to find sufficient oil, and there is good reason to believe that it can continue to keep pace with growing demand for years to come, Morgan J. Davis, president of Humble Oil & Refining Company, said in speaking at the opening session of the 44th annual meeting of the American Association of Petroleum Geologists.

He divided the first century of oil into 33-year periods—the three "generations" of petroleum exploration—and went on to show how changes in technology and operations have enabled the industry to make dynamic progress in spite of a persistent tendency, even by the industry itself, to underestimate its future growth and reserves.

Mr. Davis, a former president of the AAPG, analyzed the reasons often advanced for the theory that "America is running out of oil." He contrasted this theory, which has been disproved so many times in the past, with the evidence supporting a much more optimistic industry's oil-finding prospects.

"It is not in the best interest of our nation or of this industry," Mr. Davis said, "to underrate either its past achievements or its capacity for future progress."

It is conservatively estimated, he said, that the industry can prove up by both primary and secondary recovery some 70 billion barrels of new oil in the next 20 years. "That is not a gloomy outlook," he added, "for an industry which, according to its past production and present estimate of reserves, has taken 100 years to prove up about 90 billion barrels of crude oil."

He said it should be emphasized that the prospects for the domestic petroleum industry could be changed to a disappointing degree by unwise actions of the federal government, state regulatory bodies, or the industry itself on such matters as conservation, percentage depletion, and import policy.

"It has taken a hundred years to build the present strength of the domestic petroleum industry," Mr. Davis said, "and every effort should be made to preserve its vigor."

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Personalities IN THE NEWS

Jas. P. Marsh Corp. Elects Officers

A. D. Rose has been elected president and **Robert E. Barnett,** vice president for sales of the Jas. P. Marsh Corp. of Skokie, Illinois.

Mr. Rose was formerly executive vice president.

Rose began his career with Jas. P. Marsh Corp. in 1918. In a relatively short period he became assistant to the sales manager and then general sales manager. During the 1920s he organized the company's first Engineering and Development Department and his name appears on many patents granted during the ensuing years. He became vice president and assistant general manager in 1942. After World War II, as general manager, he directed the company's development — both in physical growth and also in sales and market expansion.

Mr. Barnett was formerly Marsh sales manager and has been with the gauge and valve company for 18 years. Barnett is a member of the American Refrigeration Institute and the American Petroleum Institute.

Robert E. Barnett A. D. Rose

Minney to Board of Directors

Edward F. Ryan, President of Capital Company, has announced the election of **Thomas S. Minney** to the Board of Directors of this wholly owned subsidiary of Transamerica Corporation. Minney is Vice President in charge of the Oil and Gas Division of Capital Company and makes his headquarters in Los Angeles.

Coale Elected to Board

George B. Coale, General Manager of Baroid Division National Lead Company, has been elected to the Board of Directors of National Lead Company. Mr. Coale is also a Vice President of National Lead and has been General Manager of Baroid Division since 1954.

Joining National Lead in 1935 as an engineer in the Titanium Division, Mr. Coale was named chief engineer of the Company in 1948 and Assistant General Manager of Baroid Division in 1949.

A graduate of the United States Naval Academy, he served in the Navy during World War II and attained the rank of Captain, U.S.N.R.

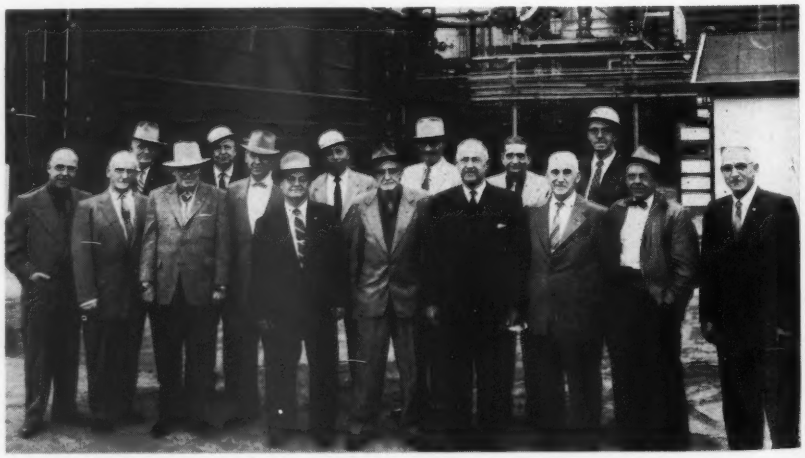
Mr. Coale is a member of the American Petroleum Institute, the Petroleum Equipment Suppliers Association, the Texas Independent Producers & Royalty Owners Association, The Texas Mid-Continent Oil & Gas Association, the American Association of Oilwell Drilling Contractors, and the Independent Petroleum Association of America.

G.P. Torrance Refinery Celebrates 30th Anniversary

Thirty years of progress are being recalled at General Petroleum Corporation's Torrance refinery this month. Three decades ago the first units of the refinery went "on stream." To celebrate the anniversary seven retired members of the original force and nine men still on the job after 30 years gathered at the refinery's first units.

Since the refinery went "on stream" in February, 1929, more than 769,000,000 barrels of crude oil have been processed. Two crude units, where primary distillation takes place and where the crude oil is first processed and separated, were the first to go into operation 30 years ago. They are still being used.

A. E. Thompson, manager of the refinery, greeted the returning veterans.



REUNION—These men are shown as they gathered recently for the 30th anniversary of of General Petroleum's Torrance refinery. From left, front row, Earl L. Coburn, A. O. Albert, Fred A. Arnold, M. L. Root, Paul Sanders, J. W. Ellsworth, Chas. H. Harris, T. J. McDermott, C. C. Lenarth, I. B. Getman. Back row, Pat Coyne, S. S. Prigg, H. J. Neiman, Ernest Erratt, John R. Gobble, John H. Neeld.

Dad gets a driving lesson...

One sure sign a boy is growing up is when he starts teaching his father something Dad has been doing for years. Driving, for example.

Tommy is typical of many 16-year olds. It wasn't too long ago that he occupied the family car only as a rider. Now, a few years later, he's giving his Dad a few tips on driving—and he's well qualified to do so, as his Safety-Economy Run Trophy testifies.

The Safety-Economy Run is now a well-accepted event all over the West. Four years ago, though, it was unknown. In March 1953, General Petroleum saw the need for encouraging young people to test the knowledge they had learned in high school driver education courses. As a result, working with civic groups and assisted by law enforcement officers and school officials, General Petroleum played an important role in the organization of the first Safety-Economy Run in Santa Paula, California. This small-scale version of the famous Mobilgas Economy Run saw 28 teen-age drivers take family cars on a 120 mile run.

Today, as thousands of high school students participate in their own local Runs, there's evidence to show that these youngsters do know more about the art of safe and economical driving than some of their Dads. General Petroleum feels proud to have started these Safety-Economy Runs. It is another of the many efforts General Petroleum is making to benefit America's younger citizens.

Mobil

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Former Presidential Advisor Joins Occidental Pet. Corp.

The appointment of Dr. Neil H. Jacoby, former special economic advisor to President Eisenhower and United Nations Representative, to the Board of Directors of the Occidental Petroleum Corporation of Los Angeles, was recently announced by Company President Dr. Armand Hammer.

Dr. Jacoby, currently dean of the Graduate School of Business Administration at the University of California at Los Angeles, is an international authority on government finance and taxation, a leader in the field of education for business management, and an author on economic subjects.

After ten years as a professor of economics and vice president in charge of finance and development at the University of Chicago, Dr. Jacoby came to UCLA in 1948. Since that time he has developed that university's upper division and graduate business administration departments. From 1953-55 he took a leave of absence at UCLA and became a member of President Eisenhower's three-man Council of Economic Advisors in Washington, D.C.

In becoming a director of Occidental Petroleum Corporation, Dr. Jacoby affiliates with a company that was founded in 1920, and is engaged in the business of developing and producing crude oil and gas in California, Colorado and New Mexico.

Tidewater Oil Honors 192 Employees This Month

A total of 5,900 years of service are represented by 192 Tidewater Oil Company employees being honored at a series of dinners this month in the company's western division. All of the employees accorded recognition will receive diamond-studded gold service emblems for completion of 25 to 45 years of service, at five-year intervals.

Three of the 192 employees have 45 years of service, 12 have 40 years, 47 have 35 years, 78 have 30 years and 52 have 25 years of service.

The first of three such ceremonies in the company's seven-state and Hawaii western division was held at the Statler Hilton in Los Angeles on March 11 for honoring long service employees at the company's headquarters in this city and in the Southern California area, with similar ceremonies following at the Fairmont Hotel in San Francisco on March 18 for employees in Northern California and at the Washington Athletic Club on March 25 for employees in the Pacific Northwest.

Average length of employment honored at the series of dinners is 31 years.

Vice President Charles R. Brown, western division general manager for Tidewater, was the principal speaker at the dinners. He was introduced by John R. Rock, western division employee relations manager.

Clayton Mark Co. Appoints Representative

John G. Bell, of the John G. Bell Company, 30-year old engineering equipment firm, has been named as California representative of Clayton Mark & Company, Evanston, Ill.

The Bell firm will distribute Clayton Mark's full line of industrial forged steel products. Industries using Clayton Mark forged steel products include oil, chemical, power, food processing, steel, missiles, and atomic energy.

Axelson Adds Field Representative

L. G. Evans, Vice President, in charge of sales, for the Axelson Division of U. S. Industries, Inc., has announced the appointment of **Lee Manning** to the company sales organization as a Field Representative.

Manning will headquarter in Glendive, Montana to handle the increased sales activity of this area. Prior to leaving the company in 1947, he was Field Representative in the Powell, Wyoming area.

Evans stated, "We are pleased to make this addition to our sales organization with a man who is completely familiar with our products and the services we can offer our customers."

NEW LITERATURE

Aluminum in Heat Exchangers

Advantages of aluminum usage in heat-exchanger fabrication are fully described in a new publication now available from Reynolds Metals Company which summarizes in 16 pages of charts and pictures, technical information needed by the heating engineer, fabricator and industrial purchaser.

The text covers aluminum heat transfer rates, temperature properties, tensile strengths, pressures and dimensional tolerances. Charts provide fingertip information on aluminum stress valves, working pressures, thermal expansion and conductivity and friction factors.

Copies may be obtained by writing Reynolds Metals Company, Dept. PRD-2, Box 2346, Richmond, Va.

Wire Rope Handbook Available

The Wire Rope Corporation of America announces the availability of its Oil Fields Data and Tables Handbook which has been specially compiled to cover problems and answers in the oil fields. The handbook gives the history of the development of Brown Strand wire rope, illustrations covering the correct method of spooling, and the use and care of wire ropes. Included in the handbook are charts evaluating each of the types of wire ropes used in the oil fields.

In addition to the Oil Fields Data and Tables handbook a new ton-mile calculator which gives a method of evaluating the various rotary drill lines is also available.

The handbook and ton-mile calculator may be obtained by writing to the Wire Rope Corporation of America, 1018 So. Santa Fe Avenue, Los Angeles 21, or to L. P. Sacre, 2639 So. Garfield Avenue, Los Angeles 22, California.

Standard Suspends Offshore Test

Standard Oil Company of California, Western Operations, Inc., has suspended drilling operations on its Standard-Humble Summerland State Lease Well No. 3. The well, drilled from the Company's giant platform about two miles off the California coast, was suspended at 8646 feet. It is the first "dry hole" drilled thus far in development of the lease.

Standard said the well was "suspended"—rather than formally abandoned, as would be the case on shore—because it will be redrilled directionally to test another part of the lease.

Industry Increases Oil Reserves During 1958

Despite a slackened rate of drilling activity in the forepart of the year, the U. S. oil industry managed to stage a comeback in 1958, and added materially to the nation's proved reserves of crude oil, natural gas liquids and natural gas.

Proved reserves in all three categories are now at all-time peaks, the American Petroleum Institute and the American Gas Association announced recently in their joint annual report on the status of these supplies of liquid hydrocarbons and natural gas.

Proved reserves of oil and natural gas are those which experience indicates can be recovered by production systems now in operation. They do not include oil in unproved portions of partly developed fields, or in stratas favorable to the accumulation of oil, but as yet untested.

The upsurge in the 1958 proved reserves statistics, which surprised many oil men, compensated somewhat for the 1957 report, which had shown a net decline for the first time since 1943.

Highlights of the 1958 report, covering the calendar year ending December 31 and representing the estimates of the reserves committees of the two trade associations, are as follows:

Crude Oil: 30 billion, 536 million barrels, up 325 million barrels over last year, and 101 million barrels, over the previous all-time high in 1956;

Natural gas liquids: 6 billion 204 million barrels, an increase of 517 million barrels over 1957, and 302 million barrels over the former peak in 1956;

Total liquid hydrocarbons (crude oil and natural gas liquids): 36 billion 740 million barrels, up 752 million barrels over 1957, and 403 million barrels over the heretofore record high in 1956.

Natural gas: 254 trillion 142 billion cubic feet, an increase of 7 billion 573 million cubic feet over 1957, the previous peak.

Contributing to the increases in the 1958 totals of proved reserves is the fact that production of crude oil, natural gas liquids and natural gas all declined slightly during the year.

The reserves committees estimated production of crude oil at 2 billion 373 million barrels, down 186 million barrels from 1957; natural gas liquids at 341 million barrels, down 11 million barrels; and total liquid hydrocarbons, 2 billion 714 million barrels, down 197 million barrels.

Natural gas production declined 17 billion cubic feet in 1958 to 11 trillion 485 billion cubic feet.

The bulk of the increase in liquid hydrocarbons reserves came from revisions of previous estimates and extensions of old pools. New reserves discovered in 1958 in new fields and in new pools in old fields amounted to only 423 million barrels of the overall total of 3 billion 466 million barrels of new liquids found.

Put the Money Where It Belongs

A 40% tax on even an extreme luxury would seem excessive to most people. But such a tax is in effect on an absolute necessity—gasoline. Federal, state and local taxes on motor fuel now equal a national average of 9c a gallon. And that amounts to 40% of the service station price of regular grade gasoline, exclusive of the tax.

To make a bad matter worse, it is proposed that the gasoline user be socked still harder, by raising the federal tax from its present 3c rate to 4½ cents.

The excuse for this is that the money is needed to pay for the multi-billion dollar highway program, and that the burden should be imposed on highway users. But that is a highly misleading alibi. For, if all the money collected from these users were applied to the road program there'd be no financing problem.

Simple statistics tell the story. In the last fiscal year the federal government took in $3.6 billion from what is known as "highway-related" collections. These collections include the gasoline tax, along with other motor vehicle taxes. But only $2.1 billion of that money was earmarked for highway purposes. A whopping 42% of the total—$1.5 billion—went into the general fund, to be used for federal activities that have no relation to highways.

There is, therefore, no justification whatever for increased gas taxes. What is needed is to put current revenues from highway users where they belong —on the road.

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Standard Oil of Calif. Announces 1958 Earnings

Standard Oil Company of California recently announced 1958 net earnings totaling $257,758,819, or $4.08 a share, compared with a 1957 net of $288,230,-391, or $4.56 a share.

The announcement was made by R. G. Follis, Chairman of the Board, and T. S. Petersen, President, in conjunction with release of the Company's annual report to stockholders.

Commenting on the outlook for the current year, the report said:

"Improvement noted in the general economy at the outset of 1959 was also reflected somewhat in the oil industry. Demand for petroleum products in the United States is expected to increase this year by nearly five per cent, and in free foreign areas by about nine per cent.

"It is expected, however, that in the short term these favorable factors will be offset to some extent by increasing competition for domestic and foreign markets, rising labor costs, and the problems of oversupply abroad, both in oil and in the tankers that transport it."

Exploratory efforts in the Western Hemisphere were "among the most satisfactory in recent years" and resulted in important oil and gas discoveries, the report said. New proved reserves of oil were established in 1958 in an amount equivalent to two barrels for each barrel consumed in operations, and gas reserves were increased by more than four times the amount of withdrawals.

Gross production of crude oil and natural gas liquids in the Western Hemisphere totaled 402,300 barrels daily, versus 455,000 barrels a day in 1957. World-wide gross production, including Standard's share of the production of Eastern Hemisphere affiliates, was 854,900 barrels daily, against 891,100 the previous year.

The decline in production was attributed to slackening in domestic crude oil demand and cutbacks in the abnormally high level of U. S. production in 1957.

Long-run prospects for the industry remain generally favorable, the report said. "The world's population is multiplying and per capita consumption of energy is increasing. Further it is anticipated that oil and natural gas will continue to serve an increasing proportion of the world's rapidly growing energy requirements for the foreseeable future."

Long Beach Harbor officials view plans to stop gradual subsidence that has continued for past 18 years. (l. to r.) William A. Smith, Jr., Assist. Subsidence Control and Repressurization Administrator; Charles L. Vickers, General Manager, Long Beach Harbor Dept.; M. A. Nishkian, head of M. A. Nishkian & Co., consulting engineer on project; and Sam Roberts, Subsidence Control and Repressurization Administrator.

We Must Find New Oil at Less Cost

The costs of finding new oil supplies are now increasing at a faster rate than development and operating costs in most areas of the United States, R. E. Megill, Senior Economist, The Carter Oil Co., Tulsa, Oklahoma, told the audience at the 44th annual convention of the American Association of Petroleum Geologists and that they, the petroleum geologists, must face up to the challenge of how to find more new oil at less cost.

After showing how costs per barrel could be calculated for any region by exhaustive examination of widely published data, Megill gave specific figures on three areas in which Carter Oil operates; the Rocky Mountains; Oklahoma-Kansas; and for the Illinois and Michigan Basins combined.

The total, or replacement cost per barrel of new oil in 1957 versus 1942, was $1.73 vs. $0.43 in the Rocky Mountains; $2.86 vs. $1.21 for Oklahoma-Kansas; and $3.67 vs. $0.73 for the combined Illinois and Michigan Basins. The finding cost portion of these totals was $0.69 vs. $0.01 in the Rocky Mountains; $1.30 vs. $0.35 in Oklahoma-Kansas; and $2.10 vs. $0.19 for the Illinois-Michigan Basins. Most of the executive geologists present seemed to accept Megill's cost figures as about in line with their own experience.

Megill also presented some breathtaking figures on the amount of new, net cash capital expenditures required to expand production in an oil province. In the Rocky Mountain region, during the seven years ending in 1957, annual oil production increased from 93 million barrels to 197 million barrels. The total cash outlay during that period was $3.697 billions vs. income of only $2.638 billions, leaving a deficit of net cash new capital to be supplied of $1.059 billions in a seven year period. Even in the recession year of 1957, when activity was slowed down, $86 million of outside cash capital over and above cash income was invested.

Soviet Oil Exports Are Increasing

Writing in The New York Times, J. H. Carmical says that the pressure of Soviet oil exports on the markets of the free world is steadily increasing. The flow approaches 300,000 barrels a day, and it has become the Russians' main economic weapon in many cases. Moreover, he adds that the prospects are that the drive on free world oil markets has only started.

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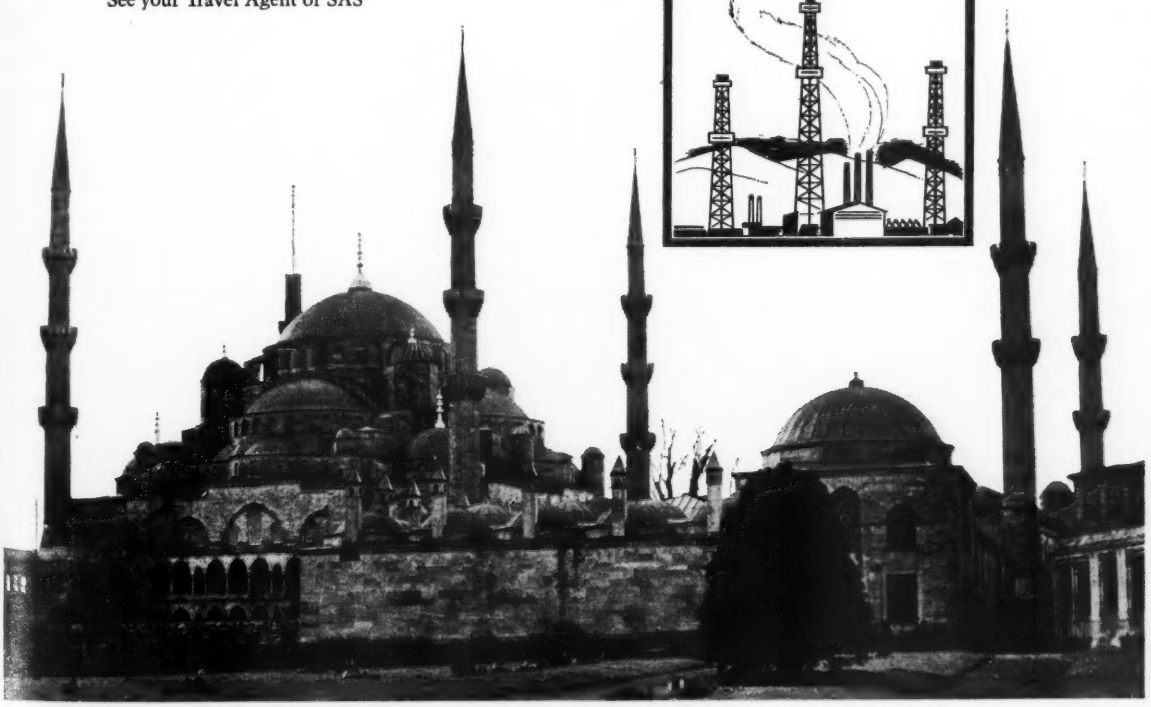

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BJ To Build Holland Plant For Oil Tools

Robert Harcus, vice president and general manager of Byron Jackson Tools, Inc., a subsidiary of Borg-Warner Corporation, announced that arrangements have been completed to establish a manufacturing plant for BJ Oil Tools in the Netherlands.

Known as Byron Jackson N. V., the company will construct a modern manufacturing plant at Etten en Leur, North Brabant Province in south Holland.

Earl M. Rees, formerly export sales manager, has been named managing director of the new company and will also serve as European sales manager for Byron Jackson Tools, Inc. Rees is now at Etten en Leur to supervise arrangements and construction. G. E. Mullinix will head engineering operations for this new overseas facility.

Construction plans provide for initial completion of 17,000 sq. ft. of plant and office space utilizing a modular expansion concept which allows progressive facility additions as required by manufacturing demands. Architects are Dwars, Heederick en Verhey.

"Finalization of our own European manufacturing facilities follows an exhaustive study by Byron Jackson of the growing requirements for quality-built oil tools in the Free World petroleum markets," stated Harcus. Harcus and William F. Martin, Byron Jackson vice president in charge of manufacturing, conducted an intensive personal survey of plant sites in Europe last year.

Schedules for start of construction and completion of the plant will be announced later.

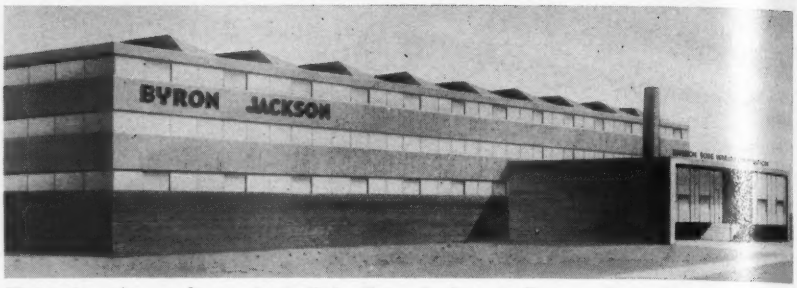

Illustration of new plant to be built by Byron Jackson in Etten en Leur, Holland, for the manufacture of BJ Oil Tools.

National Stripper Well Survey

The Interstate Oil Compact Commission anounced the completion of the January 1, 1958, National Stripper Well Survey.

This survey indicates that 372,519 wells were classified as stripper wells during the year, 1957, and produced an average of 3.50 barrels of oil per day per well. These wells comprise more than 66 per cent of the total number of wells in the United States, and during 1957 produced 474,919,000 barrels, more than 18 per cent of the total produced.

A compilation of the reserves remaining in the stripper well fields indicates that there are 4,154,000,000 barrels of primary reserves and 3,934,000,000 barrels of secondary reserves recoverable from these fields, or a total of primary and secondary reserves in excess of 8,000,000,000 barrels. This is more than 25 per cent of the presently estimated crude oil reserves of the United States.

Standard Introduces New Gasoline in L.A. Area

A super premium gasoline, has recently been introduced in the Los Angeles area by Standard Stations, Chevron Dealers, and Standard wholesale marketing outlets.

This marks the start of three-grade gasoline marketing in the West, announced K. W. Kendrick, Regional Vice-President.

Kendrick said the new motor gasoline, Chevron Custom Supreme, has been added to the "Regular" and "Premium" lines now carried at all Standard's independent dealer and Company-operated units. Custom Supreme sales will be extended to areas outside population centers as soon as installation of additional pumps and tanks can be completed.

"The introduction of this new product represents an entirely new concept in gasoline marketing," Kendrick said. "For many years, only two grades of gasoline have been needed to satisfy the power requirements of automobile engines, but the power demands of recent models are so exacting that a new problem has arisen. If current premium grades are continually increased in octane, millions of gasoline users who do not require these extra octanes will be paying for power they do not need." The answer, Kendrick said, is three grades of gasoline.

"Chevron Custom Supreme," Kendrick continued, "will have an octane rating substantially above that of any existing premium gasoline on the market today and octane requirements of late model cars will be fully met for the first time in several years. Octane ratings of the two present grades, Chevron Supreme and Chevron, also have been increased."

He announced that installation of extra pumps and tankage has been completed or under way at nearly 2,000 stations and represents an investment of approximately $14 million, not including extensive changes in refinery processes.

I.P.A.A. Requests Investigation

The Independent Petroleum Association of America has requested the Treasury Department to investigate the importation of 90,000 barrels of Rumanian residual fuel oil which was unloaded at New York February 24 and an earlier shipment of Rumanian crude tar to this country.

In a letter to Secretary Robert Anderson, Russell B. Brown, IPAA General Counsel, said "We are confident that you recognize the impact such imports could have on the domestic petroleum industry and our national security." As a representative of that industry, the Association said "we respectfully request that your Department make any necessary inquiries to determine if there is any unfair competitive practices involved in these or future petroleum imports from behind the Iron Curtain."

The IPAA emphasized that on account of restrictions on public information from the Soviet areas it had no facilities through which to obtain the necessary facts on these imports from behind the Iron Curtain and stated that "our only recourse is to bring this matter to your attention and request that your Department make the necessary investigations and determinations . . ."

G.P. to Build New Delayed Coking Unit at Torrance

General Petroleum Corporation has announced the award of a contract to Bechtel Corporation to build a new delayed coking unit for its refinery at Torrance, Calif. The new unit, with a planned throughput of 9300 barrels, will increase the refinery's coking capacity to 35,000 barrels a day.

The new unit, which is scheduled for completion in the first quarter of 1960, will cost upwards of $4,500,000. Work will begin soon, the company said.

General Petroleum declared that this new unit will be particularly useful to the company because much of its crude supply is low gravity heavy oil. The additional coking facilities will allow the company to get better use out of every barrel of oil.

"This is important to the company now," R. E. Lauterbach, vice president and director of manufacturing, said, "because of increased imports of natural gas into our marketing area, which have caused a reduction in fuel oil consumption, and because of the passage of Rule 62 in Los Angeles County which prohibits the burning of fuel oil (a heavy oil product) during the so-called smog season. Thus, General Petroleum, in order to make the best possible use of its crude supply, decided to expand its coking facilities."

Atomic Power Limited As Commercial Energy

The impact of Atomic Energy in a competitive way will be confined to some part of no more than 20 per cent of the total commercial energy market of the United States within the foreseeable future, Wm. B. Heroy, Sr., President of Geotechnical Corp., told the 44th Annual Convention of the American Association of Petroleum Geologists in Dallas recently.

Heroy explained that in a country so lushly rich with cheap energy sources as the United States, the percentage of total energy consumption maintained about the same pattern through the years, even though the total amount consumed increased rapidly. This pattern shows 18 per cent for electric power production; 25 per cent for industrial heating and manufacturing; 30 per cent for residential and commercial heating; and 20 per cent for transportation.

Atomic Energy will probably become of some competitive importance only in the electric power production and marine transportation markets, totaling about 20 per cent of the energy market. Regardless of relative cost versus other sources of power, the danger to the public as a result of destruction of atomic shielding from some accident of non-atomic type would make it too risky to use Atomic Energy in industrial plants or for commercial and residential heating. Land or air transport of non-military type would be too prone to accidents to dare risk use of Atomic Engines. That leaves only some portion of the electric power and marine transportation markets where it would be safe to use Atomic Energy.

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Desert Well Suspends

In the Kramer area of San Bernardino County, Myron T. King has suspended operations on Alicia No. 1 in Section 28-11n-5w at a total depth of 3553 feet. An electric log was run before suspending.

Humble Second San Gabriel Test

Humble Oil & Refining Company skidded the derrick approximately five feet to the south and east of their Unit One No. 1 in Section 24-1s-12w, and is drilling below 3750 feet on their second test, Unit One No. 2. The Unit One No. 1, on a pump test of the interval 4065-4120 feet, recovered 2 b/d oil and 98 b/d water.

Potrero Completion For Standard

Standard Oil Company's Hardy No. 2 in Section 34-2s-14w was completed on a gas lift from a depth of 10,600 feet, however completion data will not be released at this time.

Rosecrans Test Abandoned

Atlantic Oil Company's Cannon No. 1 near the intersection of Rosecrans and Avalon Boulevards in Section 20-3s-13w has been abandoned at a total depth of 7000 feet and a redrilled depth of 6500 feet. The test was located 700 feet northeast of the Kishima No. 1, recently completed flowing 100 b/d of 39 gravity oil, cutting 38 per cent.

Silver Lake Test Abandoned

Richfield Oil Corporation's town-lot test, Silver Lake Community-A No. 1, located near the intersection of Benton Way and Sunset Boulevard in Section 17-1s-13w, drilled to a total depth of 8054 feet and has been abandoned. A test of shallow showings above a plug at 928 feet was made before abandoning.

Castaic Junction Dual Completion

Humble Oil & Refining Company completed N. L. & F. No. 63 as a dual completion flowing 240 b/d of 28 gravity oil and 38 b/d water from the interval 13,000-13,035 feet, and 140 b/d of 24 gravity oil from the interval 13,188-13,288 feet. Located in Section 13-4n-17w, the well bottomed at 13,468 feet and cemented 5½" casing at 13,382 feet.

Tidewater Will Deepen Potrero Well

Tidewater Oil Company has acquired the Turf Oil Company's well No. 2 and is cleaning out to deepen to the O'Dea Zone at approximately 8700 feet. Located in Section 34-2s-14w, the well was originally completed in 1940 from a depth of 5803 feet.

Rosecrans New Location

Atlantic Oil Company has staked location for Boren No. 1 on Lot 21 of the Gardena Heights Tract in Section 20-3s-13w.

Mahala Field Wells

General Petroleum Corporation has staked locations for Abacherli No. 13 and No. 14 in the northeast corner of Section 12-3s-8w. Fowler Drilling Co. has the contracts to do the drilling.

Newhall Test Abandoned

The Sun Drilling Company's Lasalle No. 1, located in Section 9-3n-16w north of the Wiley Canyon area, has been abandoned at a total depth of 8025 feet. Showings logged in the well were too tight to give up any oil.

SAN JOAQUIN VALLEY

Devils Den Abandonments

Humble Oil & Refining Company drilled to 2500 feet and after running an electric log abandoned Avenal Land & Oil Co. No. 4 located in the southeast quarter of Section 20-23s-17e, approximately 7 miles northwest of Pyramid Hills production.

In Section 19-25s-19e, Humble Oil & Refining Company abandoned Federal-Union No. 1 Hole No. 2 at a total depth of 4500 feet.

Fresno County Wildcat Test

Sam B. Herndon, veteran California operator, has announced a location for J. C. Forkner No. 1 to be drilled in the southeast quarter of Section 20-13s-19e, approximately seven miles northwest of the town of Fresno.

Mountain View Outpost Test

Larry Freeman, Operator, has graded location for C. R. No. 81-30, to be drilled in the northeast quarter of Section 30-30s-29e.

Tejon Completion For Richfield

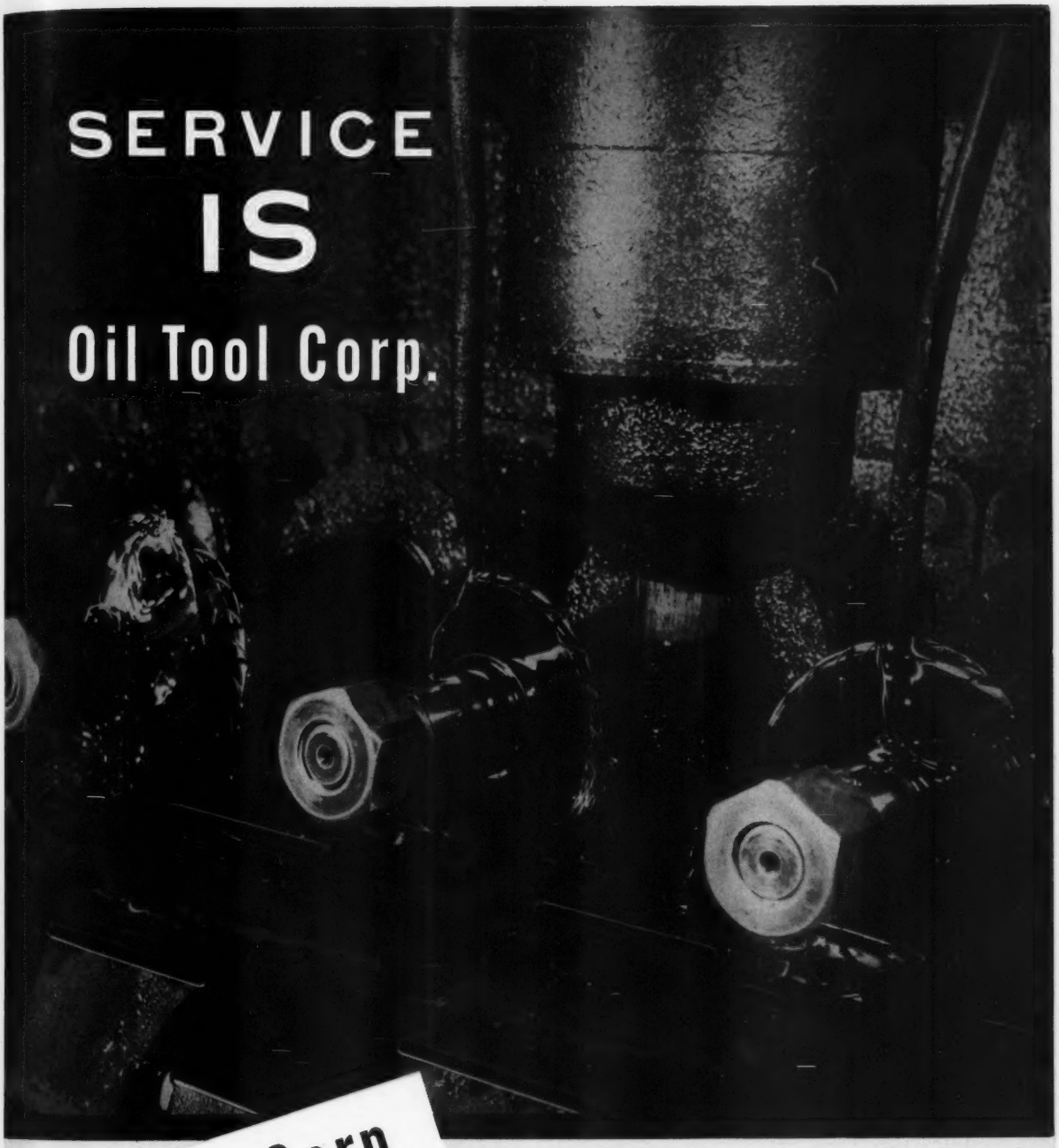
In the Highway area of the North Tejon field, Richfield Oil Corp. completed KCL-I No. 43-24 in Section 24-11n-20w as a dual completion, flowing 324 b/d of 38.6 gravity oil cutting 0.2 percent through a 14/64" bean from the perforated interval 8777-8857 feet in the Z-1 Zone, and 148 b/d of 33.5 gravity oil cutting 1 percent through a 14/64" bean from the perforated interval 9269-9372 feet in the Z-5 Zone. The well was drilled to a total depth of 9462 feet and has 7" casing cemented at 9255 feet.

Standard Tests Pioneer Anticline

Standard Oil Company has staked location for KCL-44 No. 34, to be drilled in the northwest quarter of Section 32-11n-22w. The test will be drilled to approximately 9000 feet and the location is 1½ miles south of the Los Lobos Field.

Ohio Abandons Maricopa Test

The Ohio Oil Company has plugged and abandoned KCL-Q No. 15-5 at a



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total depth of 10,533 feet. Logs were run before plugging. The test was located 3½ miles north of the Los Lobos Field in Section 5-11n-22w.

Ant Hill Test Abandoned

Logging gray sand in both the Olcese and Jewett Zones, Richard S. Rheem, Operator, has abandoned Amerada - USL No. 18-24 at a total depth of 3775 feet. The test was located in Section 14-29s-29e, approximately 2000 feet east of the Ant Hill Field.

Fresno County Test Abandoned

Midway between the Burrel and Riverdale fields, Carr and Wrath have abandoned Union-Central Life No. 55X in Section 7-17s-19e. The test was drilled to total depth of 8300 feet.

Two Recompletions For Shell

Shell Oil Company reentered and recompleted two old wells in the Strand-Posuncula Field with excellent results. Posuncula-KCL No. 88-1 in Section 1-30s-25e, after gun-perforating the 5½" casing opposite Stevens Sand stringers from 8435-8460 feet was returned to production flowing 614 b/d of 34.4 gravity oil cutting 6 percent through a 20/64" bean with pressures 520/670 psi. Posuncula-KCL No. 28-6 in Section 6-30s-26e, also perforated 5½" casing opposite Stevens Sand stringers from 8910-8950 feet and was recompleted flowing 725 b/d of 35.5 gravity oil cutting 0.7 percent through a 18/64" bean with pressures of 800/80 psi.

Gosford Completion For Signal

Signal Oil & Gas Company completed KCL No. 41-13, an extension test in Section 13-30s-26e flowing 240 b/d of 34 gravity oil cutting 0.1 percent through a 14/64" bean with pressures of 615/700 psi, along with 148 mcf of gas. The well, a shallower pool discovery, was drilled to a total depth of 9707 feet and cemented 5½" casing at 7175 feet and casing was then perforated from 7041-7051 feet and 7015-6960 feet.

Garrison City Extension Test

Golden Bear Oil Co., Operator, is preparing to spud Garrison City Unit-CWOD No. 1 in the southwest quarter of Section 4-28s-24e. Location of the test is approximately 2640 feet north of its new field discovery.

Fruitvale Extension Test Abandoned

Coast Exploration Company abandoned Capital No. 81-X at a total depth of 4306 feet. The test was located in the northeast quarter of Section 20-29s-27e, approximately 1500 feet west of production.

Gosford Test Abandoned

Union Oil Company has abandoned KCL No. 36-23 located near the center of Section 23-30s-26e at a total depth of 10,280 feet.

Union Oil Company will drill Frazier Trust No. 25X-24 in the southwest quarter of Section 24-30s-26e.

Dual Completion for Reserve

Reserve Oil & Gas Company completed BW-T No. 312-20 flowing from both the Upper and Lower Zones. Production from the Lower Zone, 11,985-12,465 feet, was 332 b/d of 36 gravity oil cutting 0.1 percent through a variable bean, and 660 b/d of 38 gravity oil cutting 0.1 percent through variable beans from the Upper Zone in the interval 11,325-11,734 feet. Located in Section 20-11n-19w, the well was drilled to a total depth of 12,465 feet and has 7" casing cemented at 10,800 feet.

Guijarral Hills Test Abandoned

Standard Oil Company has abandoned Well No. 577-27F in Section 27-20s-16e, a field well, at a total depth of 10,360 feet. A test of the interval 10,255-10,360 feet recovered gassy oily drilling fluid.

McKittrick Wildcat Test

Approximately one mile northeast of the town of McKittrick, Standard Oil Company is drilling below 2000 feet on Spreckles No. 9-5 located in the northeast quarter of Section 16-30s-22e. Approximately 700 feet to the southeast, the company abandoned Spreckles No. 75-16Z at a depth of 5534 feet in July, 1954.

Madera County Gas Test

Ude-Wahlberg Associates of Fresno, California, has graded location for Preciado No. 1, a wildcat gas test six miles north of the town of Madera in the southwest quarter of Section 13-10s-17e.

Kings County Gas Test

In the Harvester area, Beach, Church & Bell are drilling below 1000 feet on Southlake Farms No. 1-13. This 2800 foot test is located in the northwest quarter of Section 13-23s-21e, approximately one mile southeast of the Shell Oil Company's Harvester Unit No. 1-1 that flowed 4000 mcf of gas from the interval 2802-2805 feet and was later abandoned.

COASTAL AREA

Oxnard Test for Standard

Standard Oil Company is drilling below 4765 feet on Maulhardt Community No. 7 in Section 36-2n-22w, an outpost test approximately 1000 feet northwest of production. Also in Section 36-2n-22w, Standard Oil Company abandoned McGrath No. 13-3 at a total depth of 6730 feet.

Tajiguas Creek Wildcat Test

Standard Oil Company is grading a location for Tajiguas Ranch No. 1 located in the northeast-quarter of Section 35-5n-31w. The wildcat location is one mile northwest of Sunray Mid-Continent Oil Co.'s Freeman-Rutherford No. 1 recently completed as a new field discovery.

Hollister Ranch Test Spuds

Aeco Corporation and King Oil Inc., have spudded their Aeco-King-Hollister No. 1-35 and are drilling below 2200 feet. Top of the Vaqueros was logged at 2130 feet.

Simi Wildcat Test

Jess C. Barnes has graded location for Didio-Jeanie No. 1, a shallow test south of the Simi Field, in the southwest quarter of Section 1-2n-18w.

Montalvo Completion For Humble

Humble Oil & Refining Company completed J. D. McGrath et al No. 2 flowing 328 b/d of 30 gravity oil cutting 0.3 percent through a ⅛" bean with a flow pressure of 1540 psi. Located in the southeast quarter of Section 31-2n-22w, the well was drilled to a total depth of 12,873 feet and has 7" casing with perforations from 11,869-11,922 feet cemented at 12,517 feet.

Humble Oil & Refining Company is grading location for Louis T. Kraemer et al No. 1, located in the southeast quarter of Section 31-2n-22w.

Cuarta Canyon Test

The Texas Company has commenced operations on its second test offshore from Cuarta Canyon in projected Section 12-4n-33w. This well is located 10 feet westerly of the number one well which was suspended in January at a total depth of 7513 feet, with the prospect of converting to a producing well at a later date.

Montalvo Gas Test

Standard Oil Company has staked location for McGrath Four No. 156-22, a gas well in the southeast-quarter of Section 26-2n-23w.

Tepusquet Wildcat Drilling

C. W. Colgrove is drilling below 500 feet on Fleisher No. 16-26 located in the northwest quarter of Section 26-10n-32w in Santa Barbara County.

Humble Abandons Piru Test

Humble Oil & Refining Company has abandoned its deep test, Mavro Warren et ux No. 1, in Section 29-4n-18w at a total depth of 11,008 feet. An electric log was run before final abandonment.

NORTHERN CALIFORNIA

Glenn County Test Abandoned

R. W. McBurney has abandoned Section 29 Unit No. 2 in Section 29-20n-2w at a redrilled depth of 5780 feet. Before the redrill job, the hole was originally abandoned at a total depth of 5929 feet.

Willows Gas Test

Berry Holding Company of San Francisco has started Kennedy No. 2, a 6000 foot gas test in Section 15-19n-2w, west of the field production.

Two Vernalis Tests Abandoned

Porter Sesnon et al and Great Basins Petroleum Company's Sesnon-Vernalis Unit 6 well No. 72-17 in Section 17-3s-6e drilled to 5143 feet and after running an electric log has been abandoned. The test was located 6000 feet northwest of production. Sesnon-Vernalis Unit 3 well No. 66-10 in Section 10-3s-6e, ½ mile north of production, drilled to a total depth of 3966 feet and was also abandoned.

Beehive Bend Redrill

General Petroleum Corp. is deepening its Section 81 Unit No. 1 on Section 10-19n-2w. Currently drilling below 5600 feet, the well was originally completed in November, 1955, at a depth of 3960 feet.

Willows Well Completing

In the Beehive Bend-Willows area, Glenn County, W. S. Payne, Jr. & Associates drilled to a total depth of 6214 feet on D'Egelbert No. 1 in Section 15-19n-2w, and are plugging back to cement 7" casing at 4730 feet, and will be completed in the upper portion of the hole. On a previous open hole test of the interval 4585-4601 feet, the well flowed 7200 mcf of gas indicating a new fault block discovery.

FOUR CORNERS AREA

New Mexico

Sunset International Petroleum Company completed well No. 2F in San Juan County, Section 4-27n-10w as a gas producer, flowing 1810 mcf of gas per day along with 45 b/d of distillate. Drilled to a total depth of 6790 feet, 5½" casing is cemented at 6780 feet and perforated from 6518-6510, 6574-6518 feet.

Arizona

Freeman Lomelino of Holbrook has announced a location for Federal No. 1 to be drilled in Navajo County, Section 30-18n-20e. The well, located to the south of present production, will be a 4000 foot Mississippian test.

Utah

Two Paradox Basin wildcats are scheduled for San Juan County. Phillips Petroleum Company will drill Federal No. 17-20, a 3500 foot Paradox test in Section 16-37s-17e approximately seven miles from previous drilling, and the Calvert Drilling Company will drill Rogers No. 1, a 6500 foot Paradox test in the northwest quarter of Section 22-37s-22e, approximately twelve miles to the northwest of the Hatch Field.

The Texas Company has announced two San Juan County locations. Navajo Tribal P No. 17, a 5800 foot Pennsylvanian test, will be drilled in Section 33-40s-25e, and Navajo Tribal X No. 4, a 5400 foot Pennsylvanian test, will be drilled in Section 4-41s-24e.

Hurricane Production & Refining Company will drill Fee No. 23-12, a Moekopi test located in the southeast quarter of Section 12-41s-12w in the Virgin Field of Washington County.

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THIS LAUGH OFF!!

A story, which is probably not true, is told of a young Brooklyn soldier who was on maneuvers in Las Vegas. Having a few minutes to himself after evening show, he strolled out into the desert and soon came back with a handful of rattlesnake rattles.

"Where in the world did you get them?" gasped his alarmed companion.

"Off'n a woim," replied the lad from Brooklyn.

A violinist stopped in a London music shop and asked for an E-string. Placing a large bunch of strings before the customer, the storekeeper remarked, "'Ere they are, sir. Select what you want. I cawn't tell the 'e's' from the 'she's'."

Teaching children ethics and morals presents difficulties. Take the woman who had been lecturing her small son on the benefits of unselfishness. She concluded with: "We are in this world to help others."

After due consideration, he asked her: "Well, then, what are the others here for?"

An insurance salesman tells about a valuable wardrobe which his firm insured for a client during a European trip. Upon reaching London she wired: "Gown lifted in London."

After due deliberation he sent this reply: "What do you think our policy covers?"

Steno May — "When I went out with that new mechanic all we did was wrestle."

Steno Fay — "Is that so?"

Steno May — "Yeah! And now that I've found out that his rich uncle died and left him a lot of money, I'm going to offer him a re-match!"

A weatherman was describing his wife to a friend.

"She speaks 150 words a minute, with gusts up to 180."

Having been out on a drinking spree the night before, the victim woke up with a splitting headache. His cat walked into the room and he yelled: "For gosh sakes, quit stomping your feet!"

Patient: "Will I know anything when I come out of the ether?"

Nurse: "Well, that's expecting an awful lot from an anesthetic."

"I hear you and your wife had a few words."

"And I still have mine. I never had a chance to use them."

A couple of skeletons in the corner closet were fed up. They began grumbling about the heat, the dust, the confining quarters and the boredom.

"What are we doing here anyway? Why don't we leave?"

"Darned if I know," the other skeleton said, "I'd leave in a minute if I had any guts."

At 10 A.M. the telephone at the reception desk of a large hotel rang frantically.

"What time does your bar open?" a man asked.

"At twelve noon, Sir," answered the clerk.

At 11 o'clock it rang again.

"Say, Mac, when doash ya bar open up?" asked the same voice.

"At twelve noon, Sir." This time the clerk was emphatic.

At 11:45 the telephone rang again.

"Shay, fren, pleesh tell me . . . scuz me . . . pleesh tell me when wosh yer bar open up?"

"At twelve noon, Sir," the clerk answered, "but I'm afraid in your condition you won't be allowed to come in."

"Come in? I wanna get out."

Television certainly has its effect on everyone. The other night a friend of ours turned on his radio by mistake. He thought he'd gone blind.

A farmer was driving past a hospital with a truck load of fertilizer. An inmate called out: "Hey! What are you hauling there?"

"Fertilizer," the farmer called back.

"What are you going to do with it?" asked the inmate.

"Put it on my strawberries," answered the farmer.

The inmate turned around to his roommate and said, "Huh! We put sugar and cream on ours, and they call us crazy."

An old farmer was complaining bitterly to the minister of the terribly bad weather for the crops, when the latter reminded him that he had much to be grateful for, all the same.

"And remember," said the good man, "providence cares for All. Even the birds of the air are fed each day."

"Aye," replied the farmer, "Off my corn."

Two business partners went fishing in a small rowboat, and suddenly a storm blew up. The boat capsized, and one of the men began to swim, his partner foundered and sputtered helplessly. He was sinking!

"Say, Harry," the swimmer said to the sinking man, "Can you float alone?"

"My gosh," said the sinking man, "I'm drowning, and he talks business."

The easiest way to make a mountain out of a molehill is to add a little dirt.

The man rushed excitedly into a smoking car of a train. "A lady just fainted in the next car," he cried. "Has anybody got any whisky?"

Immediately several flasks appeared. He seized one, tilted it back, took a drink and returned it, saying, "Thanks. It always did make me feel sick to see a lady faint."

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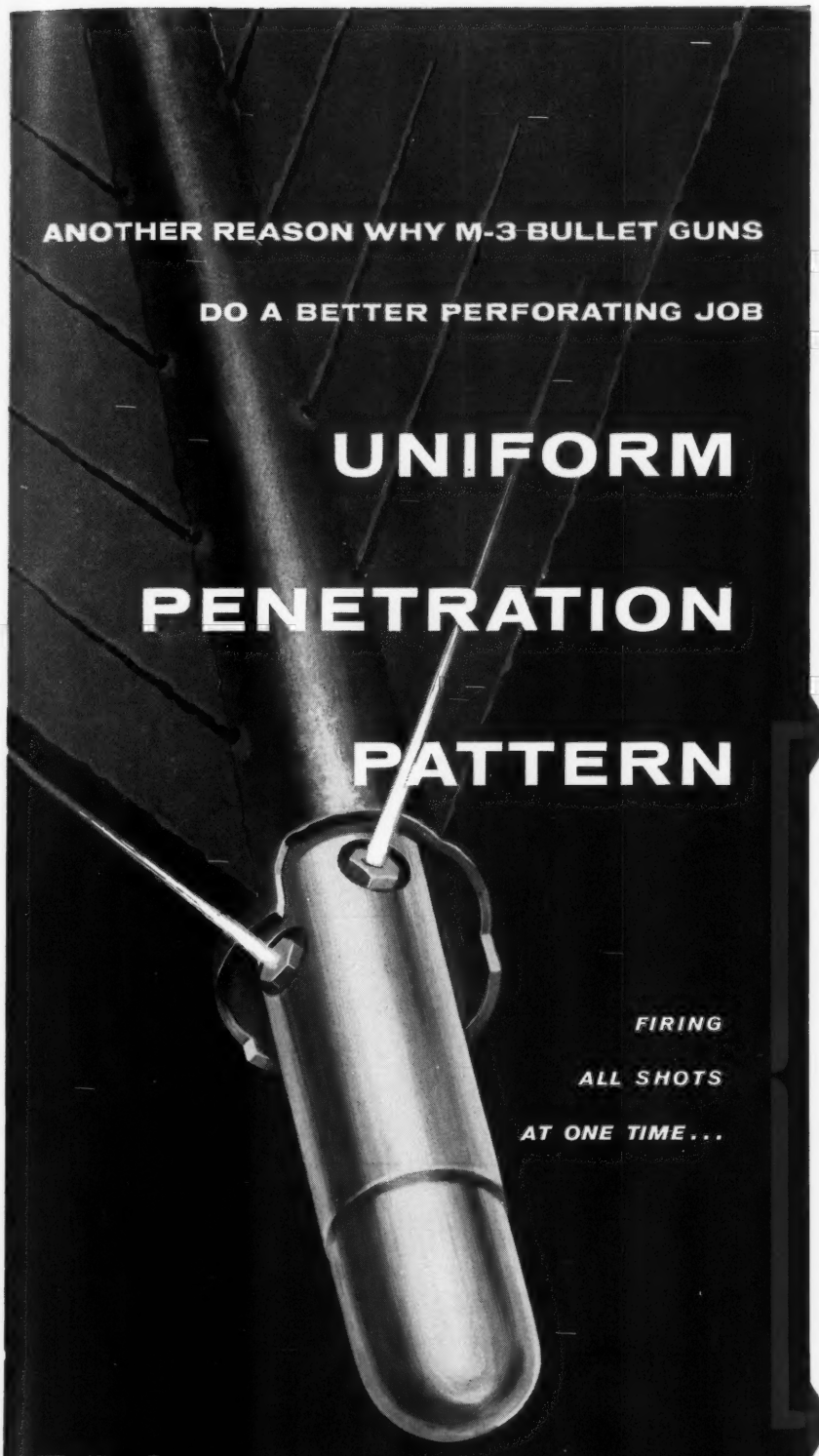

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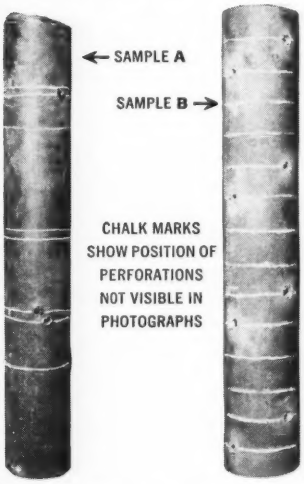
An M-3 Gun fires all shots at one time while the gun is motionless in the casing. Thus, perforations are the exact pattern of the chambers in the gun – in any shot density desired.

Combine McCullough's precise depth measurements with deep, evenly spaced perforations covering the *entire* pay zone and you get maximum drainage from formation to well bore – best possible production.

prevents bunching of shots in one small area in pay zone, giving insufficient coverage – prevents scattering of shots over a wide area, possibly missing the pay zone entirely. Sample A (actual photo of pipe recovered from well) shows the erratic shot pattern produced by a gun firing one shot at a time. As each shot is fired the upward thrust of released gases causes the gun to dance up and down.



eliminates the danger of possible pipe damage or failure. Too many perforations in one spot or in a coupling can cause pipe to part if it is in severe tension. Sample B is an actual example of six shots per foot fired by an M-3 Bullet Gun. Note the uniformity of shot pattern – no danger here of seriously weakening your casing, and you get the most productive perforating job possible.

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